



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Northwest Region  
7600 Sand Point Way N.E., Bldg. 1  
Seattle, WA 98115

Refer to:  
2002/01229

October 24, 2002

Ms. Shannon Stewart  
Bonneville Power Administration  
P.O. Box 3621  
Portland, OR 97208-3621

Re: Endangered Species Action Section 7 Formal Consultation and Magnuson-Stevens Act  
Essential Fish Habitat Consultation on the Nursery Bridge Fish Ladder Debris Removal  
Project, Walla Walla River, Umatilla County, Oregon.

Dear Ms. Stewart:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) for the Bonneville Power Administration's (BPA) Nursery Bridge Fish Ladder Debris Removal Project on the Walla Walla River in Umatilla County, Oregon. NOAA Fisheries concludes in this Opinion that the proposed action is not likely to jeopardize the continued existence of the ESA listed Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*). Pursuant to section 7 of the ESA, NOAA Fisheries includes reasonable and prudent measures with non-discretionary terms and conditions that NOAA Fisheries believes are necessary and appropriate to minimize the potential for incidental take associated with this project.

In addition, this document also serves as consultation on essential fish habitat (EFH) for chinook salmon pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and its implementing regulation (50 CFR Part 600).

Questions regarding this letter should be directed to Doug Baus, of my staff in the Oregon Habitat Branch at 541.975.1835 ext 224.

Sincerely,

*for Michael R. Crouse*

D. Robert Lohn  
Regional Administrator

cc: Michelle Eames, USFWS  
Bill Duke, ODFW  
Preston Bronson, CTUIR  
John Brough, HBID  
Mary Headley, COE  
Chris Hyland, COE



Endangered Species Act - Section 7 Consultation  
&  
Magnuson-Stevens Act  
Essential Fish Habitat Consultation

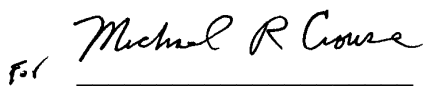
BIOLOGICAL OPINION

Nursery Bridge Fish Ladder Debris Removal Project  
Bonneville Power Administration  
Walla Walla River, Umatilla County, Oregon

Agency: Bonneville Power Administration

Consultation  
Conducted By: NOAA Fisheries,  
Northwest Region

Date Issued: October 24, 2002

Issued by:   
D. Robert Lohn  
Regional Administrator

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## 1. ENDANGERED SPECIES ACT

### 1.1 Background

On August 7, 2001, NOAA Fisheries issued the US Army Corps of Engineers (COE) a biological opinion (Opinion) for the construction of the Nursery Bridge Fish Ladder (Fish Ladder) located on the Walla Walla River, in Milton-Freewater, Oregon (OSB2001-0137-FEC). The project was a cost share project funded by the COE and the Bonneville Power Administration (BPA). The COE contributed 75% of the project costs and the BPA contributed the remaining 25%. The BPA has continued to fund the Hudson Bay District Improvement Company (HBDIC) to operate and maintain the Fish Ladder. Debris deposition has been occurring inside the Fish Ladder since its construction and, as a consequence, the facility has not been properly functioning.

Two high flow events occurred at the Fish Ladder in the spring of 2002. The first event resulted in an emergency shut down to remove large woody debris from the Fish Ladder (4/13 and 4/14). The Oregon Department of Fish and Wildlife (ODFW) performed a salvage operation to remove stranded juvenile MCR steelhead (*Oncorhynchus mykiss*) and spring/summer chinook salmon (*O. tshawytscha*). The second event resulted in gravel deposition in the Fish Ladder. Removal of the deposited gravel is essential to reduce the potential for: (1) Impairing fish passage; (2) causing structural damage to the fish screens; and (3) causing an emergency shut down of the facility to remove the gravel that is not allowing the Fish Ladder to function appropriately.

On July 29, 2002, representatives from NOAA Fisheries, ODFW, and the Walla Walla Irrigation District visited the Fish Ladder. The agencies noted that debris has continued to deposit in the Fish Ladder since the spring of 2002. The agencies discussed the importance of removing the debris by October 31, 2002, which is the end of the ODFW in-water work window (ODFW 2000). If the debris is not removed by the end of the ODFW in-water work window (July 1 to October 31), the debris will continue to be a potential passage barrier to salmonids. There is also the potential to cause structural damage to the Fish Ladder if the debris is not removed.

On August 14, 2002, NOAA Fisheries sent a letter to the COE indicating there were short-term and long-term issues that the COE needed to address to ensure the Fish Ladder functioned properly. The short-term problem involves removing debris from the Fish Ladder before October 31, 2002, the end of the ODFW in-water work window. The long-term problem involves engineering modifications needed at the Fish Ladder to ensure the Fish Ladder functions properly. To expedite the process to address the more immediate need to remove debris from the Fish Ladder, NOAA Fisheries recommended the COE accept jurisdiction and address ESA compliance through use of the SLOPES Programmatic Opinion (OHB2001-0016-PEC).

To address the long-term issues and ensure the Fish Ladder functions properly, NOAA Fisheries requested the COE re-initiate consultation on the Fish Ladder. On September 17, 2002, the US Fish and Wildlife Service (USFWS) sent a letter to the COE (USFWS 2002) and also requested

the COE to comply with the same issues requested in the August 14, 2002, letter NOAA Fisheries sent to the COE. The COE informed NOAA Fisheries that the removal of debris from the Nursery Bridge Fish Ladder Project does not fall under their jurisdiction and therefore, would not be initiating ESA consultation on the debris removal project. The BPA agreed to fund and therefore consult under ESA on the removal of debris from the Fish Ladder.

On October 10, 2002, NOAA Fisheries received a letter from the BPA requesting formal consultation on the Nursery Bridge Fish Ladder Debris Removal Project in the Walla Walla River in Umatilla County, Oregon. Middle Columbia River (MCR) steelhead occur within the project area and the BPA indicated that the proposed project is “likely to adversely affect” (LAA) the subject listed species.

This Opinion considers the potential effects of the proposed action on MCR steelhead. The MCR steelhead were listed by NOAA Fisheries as threatened under the ESA on March 25, 1999 (64 FR 14517). NOAA Fisheries issued protective regulations for the MCR steelhead under ESA section 4(d) on July 10, 2000 (65 FR 42422). The objective of this Opinion is to determine whether the subject action is likely to jeopardize the continued existence of MCR steelhead. Spring/Summer chinook salmon found in this area are not listed under the ESA.

## **1.2 Proposed Action**

The Nursery Bridge Dam (the Dam) is located on the Walla Walla River at river mile 51.9 in the city of Milton-Freewater, Oregon (Township 5N, Section 1, Range 35E, NW Quarter). The Dam fish ladder is a vertical slot design, which was constructed by the COE in 2001. Operation and maintenance of the fish ladder is conducted by the HBDIC, with funding provided by BPA. The fish ladder has been in operation for approximately one year.

As a result of 2002 high flows, gravel has accumulated in the exit channel of the fishway, constituting approximately 30% of the total fishway capacity. Additional high flows in 2002/2003 will likely deposit more gravel in the fishway. The gravel may impair fish passage by making the auxiliary water supply inoperable, making the screen cleaners inoperable, and affecting the fishway flows and depths. BPA, in conjunction with the HBDIC, is proposing to remove the existing gravel and restore fish passage through the ladder. The ODFW in-water work window for the project is July 1 to October 31<sup>st</sup> (ODFW 2002). In order to meet the deadline for the ODFW in-water work window for this year the BPA would like to have the project completed by October 31<sup>st</sup>.

The HBDIC and ODFW will clean out the gravels and debris in the Fish Ladder between October 22 and October 31, 2002. Actual cleaning is expected to take approximately two working days. The HBDIC will close all flow off by using either an inflatable, rubber Aqua Dam or sheets of plywood and plastic across the intake structure. All work to stop the water flow will be done by hand.

When water flow is at a minimum, ODFW staff will conduct a fish rescue effort using electro-shocking techniques, and once caught by net, they will be transported in five gallon buckets approximately 25 meters upstream. ODFW estimates that up to approximately 1,000 juvenile fish could be captured during the salvage operation (high end estimate). Based on previous experience, ODFW expects less than a 5% mortality associated with the electro-shocking (less than 50 juveniles).

In order to access the gravel, HBDIC will remove the fence around the intake and the grates covering the intake. A rubber-tired John Deere 595 excavator will be placed on the bank and will reach down into the Fish Ladder. HBDIC plans to place some fill against the backside of the east exit channel wall in order to create a level working platform for the backhoe. Once a starting hole in the gravel is established, a crew of laborers will enter the site and fill the excavator bucket using shovels and wheelbarrows until all gravel has been removed. Removal will involve approximately 14-30 cubic feet of gravel.

Water that leaks into the site and mixes with sediments will not be allowed to return to the river. If need be, the first chamber will be closed off and a water pump placed at that location to remove water and any sediment out of the ladder. If an aqua dam is used, a pump will be placed between the dam and intake structure. This water will then be pumped back instream, as it is above all work being performed. As the dump truck is filled, the dredged material will be hauled away and dumped at an upland location along HBDIC's canal system. Before flow is returned to the ladder, the HBDIC will high-pressure wash both sides of the screen surface, do a complete walk through, and correct any potential problems. All water associated with the high-pressure wash will be pumped to an adjacent upland location.

While the fishway is dewatered, three low weirs will be constructed inside the Fish Ladder exit channel. The weirs will serve two purposes: (1) To trap gravel that would otherwise be transported into screen area; and (2) to enable the operators to isolate the exit channel from the river for routine cleaning without constructing cofferdams in the river. The weirs will be constructed using wooden stop logs on the floor of the exit channel, and will be about 2-3 feet high. The stop logs will be supported by 8-foot-high steel C-sections bolted to the walls of the ladder exit channel. This will enable the installation of stop logs sufficiently high to isolate the exit channel from the river periodic maintenance at practically any river flow. The construction will be performed by HBDIC.

The action area is defined as "all areas to be affected directly or indirectly by the Federal action, and not merely the immediate area involved in the action" (50 CFR 402). For the proposed project, the action area is defined as the existing Fish Ladder and downstream to the limits of any visible turbidity resulting from construction activities. NOAA Fisheries expects that juvenile MCR steelhead will be present in the action area during the debris removal and salvage operation.

### **1.3 Biological Information**

Within the action area, the Walla Walla River serves as a rearing area and a migration corridor for ESA-listed MCR steelhead. Features of the adult spawning, juvenile rearing, and adult and juvenile migratory habitats for this species are: Substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food (juvenile only), riparian vegetation, space, and safe passage conditions.

MCR steelhead were listed as threatened under the ESA by NOAA Fisheries on March 25, 1999 (64 FR 14517). Biological information concerning the MCR steelhead is found in Busby et al. (1996). The current status of the MCR steelhead, based upon their risk of extinction, has not significantly improved since the species was listed (Chilcote, 1998). For the Nursery Bridge area, counts of summer steelhead on the Walla Walla River at the Dam show a 5-year geometric mean abundance of more than 300 fish (Greer 1998). Inadequate flows and migration conditions during critical portions of both adult and juvenile migration periods have been the primary contributors to the extirpation of salmon and depression of the native summer steelhead populations in the basin (BPA 1999). Although since the 1992-93 run year, adult escapement to the Oregon portion of the Walla Walla subbasin has been well above the interim viable threshold (ODFW 2001), especially severe declines in escapement numbers have been occurring in the project area. Between 1993 and 1998, summer steelhead decreased by almost 17% per year at the Dam (Greer 1998).

The historic presence and current absence of natural coho and chinook salmon populations provides a measure of the degree to which the low elevation anadromous habitat has been degraded in the Walla Walla subbasin. Runs of spring and fall chinook, chum, and coho were reportedly present historically in the Walla Walla River subbasin (Swindell 1942). Fall chinook, chum, and coho were likely only near the mouth of the river and may have been a spillover from large runs in the Columbia River. The only naturally-occurring populations of anadromous fish currently present in the Walla Walla subbasin are MCR steelhead.

### **1.4 Evaluating Proposed Actions**

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). In conducting analyses of habitat-altering actions under section 7 of the ESA, NOAA Fisheries uses the following steps: (1) Consider the status and biological requirements of the species; (2) evaluate the relevance of the environmental baseline in the action area to the species' current status; (3) determine the effects of the proposed or continuing action on the species; (4) consider cumulative effects; and (5) determine whether the proposed action, in light of the above factors, is likely to appreciably reduce the likelihood of species survival in the wild. In completing this step of the analysis, NOAA Fisheries determines whether the action under consultation, together with all cumulative effects when added to the environmental baseline, is likely to jeopardize the continued existence of the listed species. If NOAA Fisheries finds that the action is likely to jeopardize the listed species, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

### **1.4.1 Biological Requirements**

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed salmonids is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list the species for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for the listed species to survive and recover to a naturally-reproducing population level, at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance its capacity to adapt to various environmental conditions, and allow it to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful spawning, rearing, and migration. The current status of the listed species, based upon their risk of extinction, has not significantly improved since the species were listed.

### **1.4.2 Environmental Baseline**

Water quality in streams throughout the Walla Walla subbasin have been degraded by human activities such as dams and diversion structures, water withdrawals, river channelization, farming and grazing, road construction, timber harvest activities, mining activities, and urbanization. Temperature alterations also affect salmonid metabolism, growth rate, and disease resistance, as well as the timing of adult migrations, fry emergence, and smoltification. Many factors can cause high stream temperatures, but they are primarily related to land-use practices rather than point-source discharges. Channel widening and land uses that create shallower streams also cause temperature increases.

Water quantity problems are also a significant cause of habitat degradation and reduced fish production. Withdrawing water for irrigation, urban, and other uses can increase temperatures, smolt travel time, and sedimentation. Return water from irrigated fields can introduce nutrients and pesticides into streams and rivers. On a larger landscape scale, human activities have affected the timing and amount of peak water runoff from rain and snowmelt. Many riparian areas, flood plains, and wetlands that once stored water during periods of high runoff have been developed.

The Walla Walla subbasin is one of many subbasins included within the Columbia Plateau province. About 27% of the entire drainage lies in the Oregon portion of the Walla Walla subbasin, where the City of Milton-Freewater has the largest population center. Land use ranges from irrigated orchards and alfalfa fields along streams, to dryland wheat farming at low to mid

elevations. Logging, livestock grazing and recreation are the dominant land uses in high elevation forest lands. Large scale irrigated agriculture has been a significant portion of the economy in this subbasin since the 1860's to the 1880's. The area has large deposits of fertile soils, but precipitation is sparse during the growing season, making irrigation necessary for crop production. The Walla Walla River from the City of Milton-Freewater (at the source of the Little Walla Walla River) to just north of the state line (approximately six miles downstream) has historically been dewatered during the summer months because of irrigation withdrawals since about 1880 (Walla Walla Subbasin Summary 2001).

Based on the best available information regarding the current status of the listed species range-wide, the population status, trends, genetics, and the poor environmental baseline conditions within the action areas, NOAA Fisheries concludes that the biological requirements of these species are not currently being met. Degraded habitat resulting from agricultural practices, diversions, channelization, forestry practices, and road building indicate many aquatic habitat indicators are not properly functioning within the Walla Walla River subbasin. Actions that do not maintain or restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of these species.

## **1.5 Analysis of Effects**

### **1.5.1 Effects of Proposed Action**

Potential impacts to MCR steelhead from the proposed action include both direct and indirect effects. Potential direct effects include mortality from capturing and handling, and temporarily blocking fish passage. Indirect effects include behavioral changes resulting from elevated turbidity levels (Sigler *et al.* 1984, Berg and Northcote 1985, Whitman *et al.* 1982, Gregory 1988), when the project is completed and water re-enters the Fish Ladder.

#### Fish Salvage Operations.

The activity carrying the highest likelihood for lethal biological effects in the proposed action on individual juvenile MCR steelhead will likely be caused by the isolation of in-water work area and resulting fish salvage operation. MCR steelhead will be removed from the fish ladder prior to de-watering using a combination of electro-shocking and netting techniques. NOAA Fisheries' electrofishing and capture and release guidelines will be followed during the salvage operation (NMFS 1998). All salvage activities will be conducted by an experienced fish biologist from ODFW.

The work area isolation is itself a conservation measure intended to reduce the adverse effects of the debris removal operation on MCR steelhead. Any individual fish present in the work isolation area will be captured and released. Capturing and handling fish causes them stress, though they typically recover fairly rapidly from the process and therefore the overall effects of the procedure are generally short-lived (NMFS 2002). The primary contributing factors to stress and death from handling are differences in water temperatures (between the river and wherever the fish are held during transport), dissolved oxygen concentrations, the amount of time that fish

are held out of the water, and physical trauma. Stress on salmonids increases rapidly from handling if the water temperature exceeds 18°C, or if dissolved oxygen is below saturation. There are associated risks to MCR steelhead during the debris removal operation, however the end result will be improved fish passage for MCR steelhead at the Fish Ladder.

#### Temporary Blocking Fish Passage.

Fish passage for MCR steelhead will be temporarily suspended at the Dam during project implementation. The Fish Ladder is expected to be out of operation for up to two days. ODFW has indicated no adverse impacts to MCR steelhead are expected to result from this temporary suspension of passage in the project vicinity (ODFW 2002) due to the current lack of function of the fish passage facility. Adult MCR steelhead will start returning to the area around December. Juvenile MCR steelhead will be able to utilize habitat upstream and downstream of the action area until the Fish Ladder re-opens.

#### Debris Removal and Stop Log Construction.

The proposed fish ladder debris removal activities will have no effect on the Walla Walla River or associated riparian habitat since no instream work is planned. All activities will be conducted in the fish ladder structure itself or from the adjacent bank, and all work will occur in the dry. The use of treated wood for the stop logs could introduce toxic compounds directly into the stream during cutting or abrasion, or by leaching (Poston 2001). Water that enters the fishway and mixes with sediments during the cleaning operation will be pumped out of the ladder to an adjacent upland location and will not be allowed to return to the river. Sediments removed from the fish ladder will be hauled offsite and disposed of at an upland location. A small pulse of sediment is expected to be released once the project is completed and water re-enters the Fish Ladder for the first time.

Behavioral avoidance of turbid waters may be one of the most important effects of suspended sediments (DeVore *et al.* 1980, Birtwell *et al.* 1984, Scannell 1988). Salmonids have been observed to move laterally and downstream to avoid turbid plumes (McLeay *et al.* 1984, 1987, Sigler *et al.* 1984, Lloyd 1987, Scannell 1988, Servizi and Martens 1991). Juvenile salmonids tend to avoid streams that are chronically turbid, such as glacial streams or those disturbed by human activities, unless the fish need to traverse these streams along migration routes (Lloyd *et al.* 1987). In addition, a potentially positive reported effect is providing refuge and cover from predation (Gregory and Levings 1998). It is likely the pulse of sediment released from the cleaning of the Fish Ladder will be minor and of short duration.

### **1.5.2 Cumulative Effects**

Cumulative effects are defined in 50 CFR 402.02 as “those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the federal action subject to consultation.” Other activities within the watershed have the potential to impact fish and habitat within the action area. Future Federal actions, including the ongoing operation of the Nursery Bridge Fish Ladder are being reviewed through separate section 7 consultation processes.

NOAA Fisheries assumes that future private and state actions will continue at similar intensities as in recent years. The extensive dewatering caused by irrigation is a factor for the decline of MCR steelhead in the Dam area, located within the “Tumalum Branch” of the Walla Walla River. Before the summer of 2000, two diversion dams in the City of Milton-Freewater, Oregon, removed all the flow from the mainstem Walla Walla River from about June 1 through September 30. This dewatered the “Tumalum Branch” for a distance of 2.5 to 5 miles. The CTUIR and ODFW have conducted several fish rescue operations as flows begin to diminish in this reach. The year 2000 rescue efforts (a cooperative of CTUIR, ODFW, and Walla Walla River Irrigators) recovered an estimated 3,500 juvenile rainbow trout/steelhead and 15 bull trout juveniles from this stretch. Juvenile rainbow/steelhead rescued in April through June were suspected to be out migrating smolts and were released below the dewatered reach, while juvenile rainbow/steelhead captured later in the year are assumed to be rearing. Rearing fish are released above the dewatered reach where flow conditions are more favorable (Washington State Conservation Commission 2001).

## **1.6 Conclusion**

After reviewing the current status of listed species, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, NOAA Fisheries has determined that the BPA’s Nursery Bridge Fish Ladder Debris Removal Project, as proposed, is not likely to jeopardize the continued existence of MCR steelhead. This finding is based, in part, on incorporation of the conservation measures included in the proposed project design (*i.e.* compliance with NOAA Fisheries’ electrofishing guidelines, cleaning the inside of the fish ladder by hand, and equipment working from the bank), but also on the following considerations: (1) Removal of debris from the Fish Ladder should improve MCR steelhead passage through the Fish Ladder; and (2) removal of debris from the Fish Ladder will prevent additional damage that will occur if the debris is not removed by the end of the ODFW in-water work window. Other than a minor sediment plume that will be released when water returns to the Fish Ladder the proposed project is not expected to have any effect on MCR steelhead habitat. The proposed action is not expected to diminish the long-term survival and/or recovery at the population or ESU level.

## **1.7 Conservation Recommendations**

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of proposed actions on listed species, or to develop additional information.

1. Minimize lethal take of MCR steelhead during the fish salvage operation. Prior to blocking the worksite for electro-shocking fish, pass through the Fish Ladder ramp using the most appropriate means to chase (herd) fish out of the ladder (*i.e.* snorkeling or walking).

## **1.8 Reinitiation of Consultation**

This concludes formal consultation on this action in accordance with 50 CFR 402.14(b)(1). Reinitiation of consultation is required: (1) If the amount or extent of incidental take is exceeded; (2) the action is modified in a way that causes an effect on the listed species or critical habitat that was not previously considered in the BA and this Opinion; (3) new information or project monitoring reveals effects of the action that may affect the listed species or critical habitat in a way not previously considered; or (4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

## **2. INCIDENTAL TAKE STATEMENT**

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. “Harm” is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. “Harass” is defined as actions that create the likelihood of injuring listed species by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. “Incidental take” is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

### **2.1 Amount or Extent of Take**

NOAA Fisheries anticipates that the action covered by this Opinion is reasonably certain to result in the incidental take of MCR steelhead. This take will result from the fish salvage operation (lethal) and the displacement of individuals due to elevated turbidity levels (non-lethal). Effects of actions such as these are not expected to have long-term effects on MCR steelhead. Based on the information in the BA, NOAA Fisheries anticipates non-lethal incidental take (capture and removal) of up to 1000 MCR steelhead, and a minor amount of lethal incidental take of up to 50 juvenile MCR steelhead could occur as a result of the actions covered by this Opinion. If this threshold is exceeded, consultation must be reinitiated. The extent of the take is limited to the project area.

### **2.2 Reasonable and Prudent Measures**

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the above species. Minimizing the amount and extent of take is essential to avoid jeopardy to the listed species.

1. Minimize incidental take from the debris removal project by applying permit conditions that avoid or minimize adverse effects to riparian and aquatic systems.
2. Ensure completion of a comprehensive monitoring and reporting program to confirm this Opinion is meeting its objective of minimizing take from permitted activities.

## 2.3 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the BPA must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To implement Reasonable and Prudent Measure #1 (general conditions for the debris removal project) the BPA shall ensure that:
  - a. Timing of in-water work. Work within the active channel will be completed during the ODFW (2000) or the Corps Seattle District (2000) preferred in-water work period<sup>1</sup>, as appropriate for the project area, unless otherwise approved in writing by NOAA Fisheries.
  - b. Cessation of work. Project operations will cease under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage.
  - c. Fish screens. All water intakes used for a project, including pumps used to isolate an in-water work area, will have a fish screen installed, operated and maintained according to NOAA Fisheries' fish screen criteria.<sup>2</sup>
  - d. Construction discharge water. All discharge water created by construction (e.g., concrete washout, pumping for work area isolation, vehicle wash water) will be treated as follows:
    - i. Water quality. Facilities must be designed, built and maintained to collect and treat all construction discharge water using the best available technology applicable to site conditions. The treatment must remove debris, nutrients, sediment, petroleum hydrocarbons, metals and other pollutants likely to be present.
    - ii. Discharge velocity. If construction discharge water is released using an outfall or diffuser port, velocities must not exceed 4 feet per second.

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<sup>1</sup> Oregon Department of Fish and Wildlife, *Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources*, 12 pp (June 2000) (identifying work periods with the least impact on fish) ([http://www.dfw.state.or.us/ODFWhtml/InfoCntrHbt/0600\\_inwtrguide.pdf](http://www.dfw.state.or.us/ODFWhtml/InfoCntrHbt/0600_inwtrguide.pdf)); U.S. Army Corps of Engineers, Seattle District, *Approved Work Windows for Fish Protection* (Version: 13 October 2000) ([http://www.nws.usace.army.mil/reg/Programmatic\\_Consultations/TimCond/WorkWinI.pdf](http://www.nws.usace.army.mil/reg/Programmatic_Consultations/TimCond/WorkWinI.pdf))

<sup>2</sup> National Marine Fisheries Service, *Juvenile Fish Screen Criteria* (revised February 16, 1995) and *Addendum: Juvenile Fish Screen Criteria for Pump Intakes* (May 9, 1996) (guidelines and criteria for migrant fish passage facilities, and new pump intakes and existing inadequate pump intake screens) (<http://www.nwr.noaa.gov/1hydroweb/hydroweb/ferc.htm>).

- iii. Spawning areas, marine submerged vegetation. No construction discharge water may be released within 300-feet upstream of active spawning areas or areas with marine submerged vegetation.
- e. Treated wood. Use of treated wood<sup>3</sup> for any structure that may contact flowing water or that will be placed over water is not authorized.
- f. Heavy Equipment. Use of heavy equipment will be restricted as follows.
  - i. Choice of equipment. When heavy equipment must be used, the equipment selected must have the least adverse effects on the environment (*e.g.*, minimally sized, rubber tired).
  - ii. Vehicle staging. Vehicles must be fueled, operated, maintained and stored as follows.
    - (1) Vehicle staging, cleaning, maintenance, refueling, and fuel storage must take place in a vehicle staging area placed 150 feet or more from any stream, water body or wetland.
    - (2) All vehicles operated within 150 feet of any stream, water body or wetland must be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected must be repaired in the vehicle staging area before the vehicle resumes operation. Inspections must be documented in a record that is available for review on request by the BPA or NOAA Fisheries.
    - (3) All equipment operated instream must be cleaned before beginning operations below the bankfull elevation to remove all external oil, grease, dirt, and mud.
  - iii. Stationary power equipment. Stationary power equipment (*e.g.*, generators, cranes) operated within 150 feet of any stream, water body or wetland must be diapered to prevent leaks, unless otherwise approved in writing by NOAA Fisheries.
- g. Isolation of in-water work area. If adult or juvenile fish are reasonably certain to be present, the work area will be well isolated from the active flowing stream using inflatable bags, sandbags, sheet pilings, or similar materials. The work area will also be isolated if in-water work may occur within 300 feet upstream of spawning habitats.
- h. Capture and release. Before and intermittently during pumping to isolate an in-water work area, an attempt must be made to capture and release fish from the isolated area using trapping, seining, electrofishing, or other methods as are prudent to minimize risk of injury.
  - i. A fishery biologist experienced with work area isolation and competent to ensure the safe handling of all ESA-listed fish must conduct or supervise the entire capture and release operation.

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<sup>3</sup> "Treated wood" means lumber, pilings, and other wood products preserved with alkaline copper quaternary (ACQ), ammoniacal copper arsenate (ACA), ammoniacal copper zinc arsenate (ACZA), copper naphthenate, chromated copper arsenate (CCA), pentachlorophenol, or creosote.

- ii. If electrofishing equipment is used to capture fish, the capture team must comply with NOAA Fisheries' electrofishing guidelines.<sup>4</sup>
- iii. The capture team must handle ESA-listed fish with extreme care, keeping fish in water to the maximum extent possible during seining and transfer procedures to prevent the added stress of out-of-water handling.
- iv. Captured fish must be released as near as possible to capture sites.
- v. ESA-listed fish may not be transferred to anyone except NOAA Fisheries personnel, unless otherwise approved in writing by NOAA Fisheries.
- vi. Other Federal, state, and local permits necessary to conduct the capture and release activity must be obtained.
- vii. NOAA Fisheries or its designated representative must be allowed to accompany the capture team during the capture and release activity, and must be allowed to inspect the team's capture and release records and facilities.

2. To implement Reasonable and Prudent Measure #2 (monitoring), the BPA shall:

- a. Implementation monitoring. Submit a monitoring report to NOAA Fisheries within 120 days of project completion that includes the following information:
  - i. Project identification
    - (1) Project name.
    - (2) BPA contact person.
    - (3) Starting and ending dates for work completed.
  - ii. Narrative assessment. A narrative assessment of the project's effects on natural stream function.
  - iii. Photo documentation. Photo of habitat conditions at the project and any compensation site(s), before, during, and after project completion.<sup>5</sup>
    - (1) Include general views and close-ups showing details of the project and project area, including pre and post construction.
    - (2) Label each photo with date, time, project name, photographer's name, and a comment about the subject.
  - iv. Other data. Additional project-specific data, as appropriate for individual projects.
    - (1) Work cessation. Dates work cessation was required due to high flows.
    - (2) Fish screen. Compliance with NOAA Fisheries' fish screen criteria.
    - (3) Isolation of in-water work area, capture and release.

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<sup>4</sup> National Marine Fisheries Service, *Backpack Electrofishing Guidelines* (December 1998) (<http://www.nwr.noaa.gov/1salmon/salmesa/pubs/electrog.pdf>).

<sup>5</sup> Relevant habitat conditions may include characteristics of channels, eroding and stable streambanks in the project area, riparian vegetation, water quality, flows at base, bankfull and over-bankfull stages, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.

- (a) Supervisory fish biologist – name and address.
  - (b) Methods of work area isolation and take minimization.
  - (c) Stream conditions before, during and within one week after completion of work area isolation.
  - (d) Means of fish capture.
  - (e) Number of fish captured by species.
  - (f) Location and condition of all fish released.
  - (g) Any incidence of observed injury or mortality.
- b. Effectiveness monitoring. Gather any other data or analyses the BPA deems necessary or helpful to complete an assessment of habitat trends in stream and riparian conditions as a result of BPA permitted actions. The BPA may use existing monitoring efforts for this purpose if those efforts can provide information specific to the objective of identifying habitat trends.
- c. A copy of the monitoring report will be submitted to the Oregon Office of NOAA Fisheries.

Branch Chief - Portland  
 NOAA Fisheries  
 Attn: 2002/01229  
 525 NE Oregon Street  
 Portland, OR 97232

### **3. MAGNUSON-STEVENSON ACT**

#### **3.1 Magnuson-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance essential fish habitat (EFH) for those species regulated under a Federal fisheries management plan. Pursuant to the MSA:

- Federal agencies must consult with NOAA Fisheries on all actions or proposed actions authorized, funded, or undertaken by the agency that may adversely affect EFH (§305(b)(2)).
- NOAA Fisheries must provide conservation recommendations for any Federal or state action that would adversely affect EFH (§305(b)(4)(A)).
- Federal agencies must provide a detailed response in writing to NOAA Fisheries within 30 days after receiving EFH conservation recommendations. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with NOAA Fisheries EFH conservation recommendations, the federal agency must explain its reasons for not following the recommendations (§305(b)(4)(B)).

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting this definition of EFH, “waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate. “Substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities. “Necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle (50 CFR 600.10). Adverse effect means any impact which reduces quality and/or quantity of EFH, and may include direct (*e.g.*, contamination or physical disruption), indirect (*e.g.*, loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).

EFH consultation with NOAA Fisheries is required regarding any Federal agency action that would adversely affect EFH, including actions that occur outside EFH, such as certain upstream and upslope activities.

The objectives of this EFH consultation are to determine whether the proposed action would adversely affect designated EFH and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH.

### **3.2 Identification of EFH**

Pursuant to the MSA the Pacific Fisheries Management Council (PFMC) has designated EFH for three species of federally-managed Pacific salmon: Chinook (*Oncorhynchus tshawytscha*), coho (*O. kisutch*), and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC 1999), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan* (PFMC 1999). Assessment of potential adverse effects to these species’ EFH from the proposed action is based, in part, on this information.

### **3.3 Proposed Action**

The proposed action is detailed above in section 1.2 of this document.

The action area includes the Nursery Bridge Fish Ladder and downstream to the limits of any visible turbidity resulting from construction activities. This area has been designated as EFH for various life stages of chinook salmon and coho salmon.

### **3.4 Effects of Proposed Action**

As described in detail in section 1.5 of this document, the proposed activity may result in short-term adverse effects to a variety of parameters. These adverse effects are turbidity from construction, and disturbance of riparian vegetation.

### **3.5 Conclusion**

NOAA Fisheries believes that the proposed action will adversely affect the EFH for chinook salmon and coho salmon.

### **3.6 EFH Conservation Recommendations**

Pursuant to Section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations to federal agencies regarding actions which may adversely affect EFH. While NOAA Fisheries understands that the conservation measures described in the BA will be implemented by the BPA, it does not believe that these measures are sufficient to address the adverse impacts to EFH described above. However, the terms and conditions outlined in section 2.3 are generally applicable to designated EFH for chinook salmon and coho salmon and address these adverse effects. Consequently, NOAA fisheries incorporates them here as EFH conservation recommendations.

### **3.7 Statutory Response Requirement**

Pursuant to the MSA (§305(b)(4)(B)) and 50 CFR 600.920(j), Federal agencies are required to provide a detailed written response to NOAA Fisheries' EFH conservation recommendations within 30 days of receipt of these recommendations. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity on EFH. In the case of a response that is inconsistent with the EFH conservation recommendations, the response must explain the reasons for not following the recommendations, including the scientific justification for any disagreements over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects.

### **3.8 Supplemental Consultation**

The BPA must reinitiate EFH consultation with NOAA Fisheries if the proposed action is substantially revised in a manner that may adversely affect EFH, or if new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920(k)).

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